

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A leakage detecting method for use in an oxidizing system of forming an oxide layer, the method comprising the steps of:
 - (a) providing an oxidizing system having an oxidizing chamber and an oxygen concentration analyzer installed in a bypass of an exhaust pipe of said oxidizing chamber;
 - (b) performing an oxidizing process on a test wafer in a test run under a specified operating condition in said oxidizing system by flowing an oxidizing gas through said oxidizing chamber containing said test wafer;
 - (c) measuring an oxygen concentration of said oxidizing gas exiting said oxidizing chamber in said test run by said oxygen concentration analyzer;
 - (d) measuring the oxide thickness of said test wafer after said test run;
 - (e) repeating (b), (c), and (d) for a plurality of test runs to obtain a correlation between the measured oxygen concentration and the oxide thickness for the plurality of test runs to identify an acceptable oxygen concentration corresponding to a maximum acceptable oxide thickness, wherein an oxygen concentration greater than said acceptable oxygen concentration indicates gas leakage in said oxidizing system;
 - (f) selecting a safety factor and multiplying said acceptable oxygen concentration with said safety factor to get a threshold oxygen concentration;
 - (g) performing a general oxidizing process on a working wafer under said specified operating condition in said oxidizing system; wherein while said oxygen concentration analyzer starts to measure an oxygen concentration of said oxidizing gas exiting said oxidizing chamber, if said measured oxygen concentration is greater than said threshold oxygen concentration, an indication of gas leakage exists in said ~~general~~ oxidizing system.

2. (original) The method of claim 1 wherein said maximum acceptable oxide thickness is about 20 Å.

3. (currently amended) The method of claim 1 wherein said specified operating condition comprises a temperature from about 700 [□]°C to 1200 [□]°C and an oxidizing time period from about 10 to 20 minutes.

4. (original) The method of claim 1 wherein said safety factor is about 0.9.

5. (original) The method of claim 1 further comprising introducing an inert gas into said oxidizing system to purge said oxidizing system prior to performing said oxidizing process.

6. (original) The method of claim 5 wherein said inert gas comprises nitrogen.

7. (original) The method of claim 1 further comprising at least one action of re-tightening one or more connectors and welding one or more pipes in said oxidizing system, upon detecting a gas leakage in said oxidizing system when said measured oxygen concentration is greater than said threshold oxygen concentration.

8. (original) The method of claim 1 further comprising ascertaining that there is no gas leakage in said oxidizing system when the measured oxygen concentration is lower than said threshold oxygen concentration, and performing an oxidizing process on at least one working wafer under said specified operating condition in said oxidizing system to form the oxide layer on said working wafer.

9. (canceled)

10. (canceled)

11. (canceled)

Appl. No. 10/652,664
Amdt. dated November 22, 2004
Reply to Office Action of November 1, 2004

PATENT

12. (canceled)

13. (canceled)

14. (canceled)

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

Appl. No. 10/652,664
Amdt. dated November 22, 2004
Reply to Office Action of November 1, 2004

PATENT

Amendments to the Drawings:

The attached sheets of drawings includes changes to Figs. 2A, 2B, and 5. These sheets, which include Figs. 2A, 2B, and 5 replace the original sheet including Figs. 2A, 2B, and 5.

Attachment: Replacement Sheets
Annotated Sheets Showing Changes